

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listing, of claims in the application:

Listing of Claims

Claims 1-25. (Cancelled)

Claim 26. (Original) A radio frequency data communication system for transmission of data collected by a multiplicity of mobile transceiver units, to a base transceiver, comprising:

a base transceiver selectively operable at a limited data rate and at an increased data rate;

the multiplicity of mobile transceiver units selectively operable at the limited data rate and at the increased data rate;

said mobile transceiver units responsive to transmissions by said base transceiver, and having control means therein to evaluate the feasibility of responding at said increased data rate;

said base transceiver effecting a communication link with one or more of said mobile transceiver units;

said mobile transceiver units for which a communication link with said base transceiver has not been established receiving the transmissions of said base transceiver to said mobile transceiver units with which a communication link has been established;

said mobile transceiver units evaluating for consistent reception of said transmissions to said one or more transceiver units;

said mobile units which consistently receive transmissions at the increased data rate responding to the base transceiver at said increased data rate when said base transceiver directs communication to said mobile unit.

Claim 27. (Original) The system of claim 26 wherein said mobile transceiver units independently evaluate transmissions from the base transceiver to said one or more mobile transceiver units having a communications link with said base transceiver.

Claim 28. (Original) The system of claim 26 wherein each mobile transceiver unit remains to receive data while no communication link is established between said mobile transceiver unit and the base transceiver.

Claim 29. (Original) The system of claim 26 wherein the base transceiver transmits packets of data to said one or more mobile transceiver units having a communication link with the base transceiver, each mobile transceiver unit with which a communication link has not been established:

attempting to receive packets of data transmitted by the base transceiver to said one or more units having a communication link with the base transceiver;

each mobile transceiver unit with which a communication link has not been established;

evaluating receipt of packets of data at the increased data rate and at the limited data rate.

Claim 30. (Original) The system of claim 26 wherein said mobile transceiver units which have not established a communication link with said base receiver receiving polling signals transmitted by said base transceiver at the increased data rate:

said mobile transceiver units evaluating for constant reception of said polling signals, to determine the feasibility of successful communication with said base transceiver at the increased data rate.

Claim 31. (Previously Presented) The system of claim 26 wherein said mobile transceiver sampling data transmitted to said one or more of said mobile transceiver units at said limited data rate and at said increased data rate.

Claim 32. (Currently Amended) In a radio frequency data communication system wherein a multiplicity of mobile transceiver units are to collect data and are to transmit the collected data promptly after its collection to a base transceiver station and wherein reliable communication between such mobile transceiver units and said base transceiver station could occur at a limited data rate, the invention comprising:

a base transceiver station capable of transmitting data at a limited data rate and at an increased data rate, said base transceiver station effecting a communication with at least one of the mobile transceiver units at the increased data rate;

the mobile transceiver units evaluating the communication from the base transceiver station to said at least one mobile transceiver unit to predict whether successful communication with the base transceiver station will occur at the increased data rate;

said mobile transceiver units which predict successful communication with the base transceiver station at the increased data rate responding to signals from the base transceiver station at the increased data rate; and

said mobile transceiver units which fail to predict successful communication with the base transceiver station at the increased rate responding signals from the base transmission station at the limited data rate.

Claim 33. (Original) The system of claim 32 wherein said mobile transceiver units responding at the increased data rate transmitting their identities to said base transceiver station and said mobile transceiver units responding at the limited data rate transmitting their identities to said base transceiver station.

Claim 34. (Previously Presented) The method of operating a radio frequency data communication system wherein a multiplicity of mobile transceiver units are to collect data and are to be able to transmit the collected data promptly after its collection to a base transceiver station, during movement of the mobile transceiver units at varying distances from the base transceiver station and wherein reliable communication with such mobile transceiver units over the entire area of mobile operation could only take place a limited normal data rate, said method comprising:

in a communications interchange between the base transceiver station and one or more mobile transceiver units, effecting an RF wireless transmission from said base transceiver station in one communication direction via an RF link at a higher than normal data rate;

at a mobile transceiver unit receiving the transmission, evaluating the consistency of reception of the transmission at a higher than normal data rate to predict successful communication between a respective mobile transceiver unit and the base transceiver station at a higher than normal data rate in spite of potentially adverse transmission conditions;

if the evaluation of the received transmission determines that transmission at a high data rate would be likely to be subject to detrimental transmission conditions, transmitting a responsive RF wireless transmission in the opposite communication direction via said RF link signaling for further communications interchange at the limited normal data rate, and

if the evaluation of the received transmission determines that transmission conditions are not likely to prevent successful transmission at a high data rate, transmitting a responsive RF wireless transmission in such opposite communication direction via said RF link signaling for further communications interchange at a higher data rate substantially higher than the limited normal data rate.

Claims 35-71. (Cancelled)

Claim 72. (Previously Presented) The method of claim 34 comprising said mobile transceiver units independently evaluating the consistency of reception of the transmission.

Claim 73. (Previously Presented) The method of claim 34, wherein at least one of said mobile transceiver units comprises a mobile unit on a vehicle.

Claim 74. (Previously Presented) The method of claim 34, wherein at least one of said mobile transceiver units comprises a portable device having a controller for controlling dynamic data rate selection and for providing local processing of user and peripheral device inputs.

Claim 75. (New) A wireless data communication system comprising:

a base station transceiver capable of communication with a plurality of mobile transceivers via a wireless network, each of the plurality of mobile transceivers employing one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of radio frequency operating conditions of the wireless network; and

the base station transceiver transmitting one or more messages usable by the plurality of mobile transceivers in performing the evaluation of radio frequency operating conditions of the wireless network.

Claim 76. (New) The system of claim 75 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating a signal strength measurement.

Claim 77. (New) The system of claim 76 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading signals.

Claim 78. (New) The system of claim 75 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating an error rate.

Claim 79. (New) The system of claim 78 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 80. (New) The system of claim 75 wherein the one or more messages comprise a polling message.

Claim 81. (New) The system of claim 75 wherein the one or more messages comprise a test signal.

Claim 82. (New) The system of claim 75 wherein at least a portion of the one or more messages is transmitted at the relatively higher data rate, in order to evaluate whether operation at the relatively higher data rate is sustainable.

Claim 83. (New) The system of claim 75 wherein at least a portion of the one or more messages is transmitted on a periodic basis.

Claim 84. (New) The system of claim 75 wherein each of the one or more messages has an associated type, and wherein messages of a predetermined type are always transmitted by the base station transceiver at the relatively lower data rate.

Claim 85. (New) The system of claim 75 wherein the base station transceiver employs one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of operation of the wireless network.

Claim 86. (New) The system of claim 85 wherein evaluation of operation of the wireless network comprises evaluating an error rate.

Claim 87. (New) The system of claim 86 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 88. (New) A machine-readable storage, having stored thereon a computer program having a plurality of code sections for implementing a method of determining a data rate in a wireless communication network, the code sections executable by a machine for causing the machine to perform the operations comprising:

receiving at least one data message via the wireless communication network;

evaluating wireless communication network operating conditions based upon the received at least one data message;

selecting one of a relatively lower data rate and a relatively higher data rate based upon the evaluation of wireless communication network operating conditions; and

transmitting at least one data message via the wireless communication network using the selected data rate.

Claim 89. (New) The machine-readable storage of claim 88 wherein evaluating wireless communication network operating conditions comprises evaluating a signal strength measurement.

Claim 90. (New) The machine-readable storage of claim 89 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading signals.

Claim 91. (New) The machine-readable storage of claim 88 wherein evaluating wireless communication network operating conditions comprises evaluating an error rate.

Claim 92. (New) The machine-readable storage of claim 91 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 93. (New) The machine-readable storage of claim 88 wherein the received at least one data message comprises a polling message.

Claim 94. (New) The machine-readable storage of claim 88 wherein the received at least one data message comprises a test signal.

Claim 95. (New) The machine-readable storage of claim 88 wherein at least a portion of the received at least one data message is transmitted at the relatively higher data rate in order to evaluate whether operation of the wireless communication network at the relatively higher data rate is sustainable.

Claim 96. (New) The machine-readable storage of claim 88 wherein at least a portion of the received at least one data message is always received at the relatively lower data rate.

Claim 97. (New) The machine-readable storage of claim 88 wherein the transmitted at least one data message comprises the selected data rate.

Claim 98. (New) The machine-readable storage of claim 88 wherein the wireless communication network is a radio frequency communication network.

Claim 99. (New) One or more circuits comprising:

receiver circuitry capable of receiving digital information communicated via a radio frequency network;

at least one processor for evaluating operating conditions of the radio frequency network, the at least one processor selecting one of a relatively lower data rate and a relatively higher data rate based upon the evaluation; and

transmitter circuitry capable of transmitting digital information at the selected data rate, via the radio frequency network, the transmitter circuitry operatively coupled to the at least one processor.

Claim 100. (New) The one or more circuits of claim 99 further comprising signal strength measurement circuitry operatively coupled to the receiver circuitry, the signal strength measurement circuitry producing an indication of signal strength of a received radio frequency signal, the indication of signal strength available for use by the at least one processor.

Claim 101. (New) The one or more circuits of claim 99 wherein evaluating operating conditions of the radio frequency network comprises evaluating a signal strength measurement.

Claim 102. (New) The one or more circuits of claim 101 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading radio frequency signals.

Claim 103. (New) The one or more circuits of claim 99 wherein evaluating operating conditions of the radio frequency network comprises evaluating an error rate.

Claim 104. (New) The one or more circuits of claim 103 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 105. (New) The one or more circuits of claim 99 wherein evaluating operating conditions of the radio frequency network is performed during reception of one or more messages.

Claim 106. (New) The one or more circuits of claim 105 wherein at least a portion of the one or more messages is received on a substantially regular period.

Claim 107. (New) The one or more circuits of claim 105 wherein at least a portion of the one or more messages comprise a test signal.

Claim 108. (New) The one or more circuits of claim 105 wherein at least a portion of the one or more messages comprise a polling message.

Claim 109. (New) The one or more circuits of claim 105 wherein at least a portion of the one or more messages is received at the relatively higher data rate, in order to evaluate whether operation of the radio frequency network at the relatively higher data rate is sustainable.

Claim 110. (New) The one or more circuits of claim 105 wherein each of the one or more messages has an associated type, and wherein messages of a predetermined type are always received at the relatively lower data rate.

Claim 111. (New) The one or more circuits of claim 99 wherein the receiver and the transmitter operate on the same radio frequency.

Claim 112. (New) A wireless data communication system comprising:

a mobile transceiver that, during operation, communicates with a base station transceiver via a wireless network, the mobile transceiver employing one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of radio frequency operating conditions of the wireless network; and

the mobile transceiver receiving one or more messages usable in performing the evaluation of radio frequency operating conditions of the wireless network.

Claim 113. (New) The system of claim 112 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating a signal strength measurement.

Claim 114. (New) The system of claim 113 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading signals.

Claim 115. (New) The system of claim 112 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating an error rate.

Claim 116. (New) The system of claim 115 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 117. (New) The system of claim 112 wherein the one or more messages comprise a polling message.

Claim 118. (New) The system of claim 112 wherein the one or more messages comprise a test signal.

Claim 119. (New) The system of claim 112 wherein at least a portion of the one or more messages is transmitted at the relatively higher data rate, in order to evaluate whether operation at the relatively higher data rate is sustainable.

Claim 120. (New) The system of claim 112 wherein at least a portion of the one or more messages is transmitted on a periodic basis.

Claim 121. (New) The system of claim 112 wherein each of the one or more messages has an associated type, and wherein messages of a predetermined type are always received by the mobile transceiver at the relatively lower data rate.

Claim 122. (New) The system of claim 112 wherein the mobile transceiver selects one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of operation of the wireless network.

Claim 123. (New) The system of claim 122 wherein evaluation of operation of the wireless network comprises evaluating an error rate.

Claim 124. (New) The system of claim 123 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 125. (New) A wireless data communication system comprising:

a mobile device that, during operation, communicates with a base station via a wireless network, the mobile device employing one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of radio frequency operating conditions of the wireless network; and

the mobile device receiving one or more messages usable in performing the evaluation of radio frequency operating conditions of the wireless network.

Claim 126. (New) The system of claim 125 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating a signal strength measurement.

Claim 127. (New) The system of claim 126 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading signals.

Claim 128. (New) The system of claim 125 wherein evaluation of radio frequency operating conditions of the wireless network comprises evaluating an error rate.

Claim 129. (New) The system of claim 128 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 130. (New) The system of claim 125 wherein the one or more messages comprise a polling message.

Claim 131. (New) The system of claim 125 wherein the one or more messages comprise a test signal.

Claim 132. (New) The system of claim 125 wherein at least a portion of the one or more messages is transmitted at the relatively higher data rate, in order to evaluate whether operation at the relatively higher data rate is sustainable.

Claim 133. (New) The system of claim 125 wherein at least a portion of the one or more messages is transmitted on a periodic basis.

Claim 134. (New) The system of claim 125 wherein each of the one or more messages has an associated type, and wherein messages of a predetermined type are always received by the mobile transceiver at the relatively lower data rate.

Claim 135. (New) The system of claim 125 wherein the mobile device selects one of a relatively higher data rate and a relatively lower data rate for transmission, based upon an evaluation of operation of the wireless network.

Claim 136. (New) The system of claim 135 wherein evaluation of operation of the wireless network comprises evaluating an error rate.

Claim 137. (New) The system of claim 136 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 138. (New) One or more circuits comprising:

at least one processor for evaluating operating conditions of a radio frequency network, the at least one processor selecting one of a relatively lower data rate and a relatively higher data rate based upon the evaluation; and

the at least one processor causing transmitter circuitry to transmit information at the selected data rate, via the radio frequency network.

Claim 139. (New) The one or more circuits of claim 138 further comprising signal strength measurement circuitry operatively coupled to receiver circuitry, the

signal strength measurement circuitry producing an indication of signal strength of a received radio frequency signal, the indication of signal strength available for use by the at least one processor.

Claim 140. (New) The one or more circuits of claim 138 wherein evaluating operating conditions of the radio frequency network comprises evaluating a signal strength measurement.

Claim 141. (New) The one or more circuits of claim 140 wherein evaluating a signal strength measurement comprises computing a weighted signal strength measurement, the weighting giving emphasis to the lower signal strength measurements of fading radio frequency signals.

Claim 142. (New) The one or more circuits of claim 138 wherein evaluating operating conditions of the radio frequency network comprises evaluating an error rate.

Claim 143. (New) The one or more circuits of claim 142 wherein evaluating an error rate comprises evaluating at least one of a bit error rate (BER), a message error rate, a rate of failure to receive a positive acknowledgement, a rate of failure to receive a response to a transmission, and a timeout of a communications protocol timer.

Claim 144. (New) The one or more circuits of claim 138 wherein evaluating operating conditions of the radio frequency network is performed during reception of one or more messages.

Claim 145. (New) The one or more circuits of claim 144 wherein at least a portion of the one or more messages is received on a substantially regular period.

Claim 146. (New) The one or more circuits of claim 144 wherein at least a portion of the one or more messages comprise a test signal.

Claim 147. (New) The one or more circuits of claim 144 wherein at least a portion of the one or more messages comprise a polling message.

Claim 148. (New) The one or more circuits of claim 144 wherein at least a portion of the one or more messages is received at the relatively higher data rate, in order to evaluate whether operation of the radio frequency network at the relatively higher data rate is sustainable.

Claim 149. (New) The one or more circuits of claim 144 wherein each of the one or more messages has an associated type, and wherein messages of a predetermined type are always received at the relatively lower data rate.

Claim 150. (New) The one or more circuits of claim 138 wherein the receiver and the transmitter operate on the same radio frequency.